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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,980	04/07/2004	Amol Khare	50325-0892	9036

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EXAMINER	
CHEN, SHIN HON	

ART UNIT	PAPER NUMBER
2131	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/820,980	KHARE ET AL.	
	Examiner	Art Unit	
	SHIN-HON CHEN	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-28 have been examined.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/15/08 has been entered.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 18 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 18 discloses a computable-readable medium, which includes carrier wave as disclosed in the specification (Specification: [0059]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Talpade et al. U.S. Pub. No. 20040148520 (hereinafter Talpade) in view of Fan et al. U.S. Pat. No. 6219706 (hereinafter Fan).

7. As per claim 1, Talpade discloses a method of preventing an attack on a network, the method comprising the computer-implemented steps of: receiving an ICMP packet, wherein a data field within the ICMP packet includes a portion of a header associated with a connection in a connection-oriented transport protocol (Talpade: [0020]: analyze packet header for packet filtering for ICMP). Talpade does not explicitly disclose wherein the portion of the header includes a packet sequence value associated with the connection; obtaining a packet sequence value from the header; determining if the packet sequence value is valid; and responding to the ICMP packet by updating a parameter value associated with the transport protocol connection only if the packet sequence value is determined to be valid. However, Fan discloses filtering packets based on the sequence number presented in the header portion of a packet and update the current session state if sequence value is valid (Fan: column 10 lines 27-51). It would have been obvious to one having ordinary skill in the art to utilize the sequence number contained in the connection-oriented packet into the field value of the ICMP packet because they are analogous art used to control DoS attack. Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to combine the teachings of Fan within the system of Talpade because it allows packet filter to analyze invalid range of value presented in header for filtering purposes.

8. As per claim 2, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the step of receiving an ICMP packet comprises receiving an ICMP packet that includes a copy of a TCP header associated with a TCP connection (Fan: column 10 lines 27-51). Same rationale applies here as above in rejecting claim 1.

9. As per claim 3, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the step of receiving an ICMP packet comprises receiving an ICMP "endpoint unreachable" error packet (Talpade: [0006]: denial of service attack).

10. As per claim 4, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the step of receiving an ICMP packet comprises receiving an ICMP packet that specifies that fragmentation is needed (Talpad: [0020]: ICMP messages).

11. As per claim 5, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the step of determining if the packet sequence value is valid comprises determining if the packet sequence value is within a range of packet sequence values that are allowed by the transport protocol for the connection (Fan: column 10 lines 27-51).

12. As per claim 6, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the step of determining if the packet sequence value is valid

comprises determining if the packet sequence value is within a range of sent but unacknowledged TCP packet sequence values for the connection (Fan: column 10 lines 27-51).

13. As per claim 7, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the step of determining if the packet sequence value is valid comprises determining if the packet sequence value is exactly equal to one or more sequence values of one or more packets that are then-currently stored in a TCP re-transmission buffer, starting at a sequence value of a previously sent segment that resulted in receiving the ICMP packet (Fan: column 10 lines 35-41).

14. As per claim 8, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the steps are performed in a router acting as a TCP endpoint node (Talpade: [0020]: sensor/firewall).

15. As per claim 9, Talpade as modified discloses the method of claim 1. Talpade as modified further discloses wherein the steps are performed in a firewall device (Talpade: [0020]; Fan: column 10 lines 27-51: firewall/packet filter).

16. As per claim 10-36, claims 10-36 encompass the same scope as claims 1-9. Therefore, claims 10-36 are rejected based on the same reason set forth above in rejecting claims 1-9.

Response to Arguments

17. Applicant's arguments filed on 1/15/08 have been fully considered but they are not persuasive.

Regarding applicant's remarks, applicant argues that Talpade reference merely discloses sensors that monitor all traffic entering the customer networks for invalid field values. However, the examiner has pointed out that the Talpade reference also discloses that the monitoring field values to determine whether there are values beyond the "defined range" of valid values (Talpade: [0020] lines 13-18). Although the Talpade reference does not explicitly disclose the field values are sequence numbers, the examiner relied on the Fan reference to disclose that packet sequence numbers are used to control DoS attack in TCP packets. Therefore, one with ordinary skill in the art would understand that the sequence number in packet headers can be used to prevent DoS attack in various network protocols.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Goldberg et al. U.S. Pub. No. 20040013112 discloses dynamic packet filtering utilizing session tracking.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shin-Hon Chen whose telephone number is (571) 272-3789. The examiner can normally be reached on Monday through Friday 8:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shin-Hon Chen
Examiner
Art Unit 2131

SC

/Ayaz R. Sheikh/
Supervisory Patent Examiner, Art Unit 2131